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THE USE OF
AGAVE AMERICANA,
AS A REMEDY FOR THE SCURVY.



By G. PERIN,
ASSISTANT SURGEON GENERAL, U. S. A.

FORT SNELLING, MINN.:
MEDICAL DIRECTOR'S OFFICE, DEP'T OF DAKOTA,
1886.



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HEADQUARTERS DEPARTMENT OF DAKOTA,

MEDICAL DIRECTOR'S OFFICE,

Fort Snelling, Minn., January 10, 1886.

The following report upon the AGAVE AMERICANA or MAGUEY PLANT taken from the New York Journal of Medicine for the month of September, 1851, is reprinted with a view of inviting further attention to a remedy which subsequent experience has proven of such value to our Army as an Anti-Scorbutic.

As there has been some misunderstanding respecting the appearance of the AGAVE AMERICANA, I have had an engraving made (*See Frontis-piece*) which represents it at the period of incipient efflorescence.

At this period the central leaves become erect as if to protect the flowering stalk. Under favorable conditions of climate and soil, *the* plant comes to maturity in about ten years.

To the inhabitants of Mexico and Central America the Maguey is almost as useful as the date palm is to the arabs of the desert.

It forms a good hedgerow to protect fields; it grows in poor soils needing no care, after planting; from the leaves a coarse fibre is taken for the manufacture of matting, ropes, &c., and last of all it is most prized as the plant from which "Pulque," the national beverage, is made. Just before the flowering stalk makes its appearance a hole is excavated in the centre of the plant to collect the juice; this hole is filled in a few days, when the juice is removed and placed in vats to undergo fermentation, after which it is called "Pulque."

Pulque is a slightly stimulant, pleasant drink, in general use among the inhabitants of Mexico, where I did not observe any cases of Scurvy.

The juice expressed from the cooked leaves has a disagreeable taste which is much lessened by the addition of sugar.

It is believed that the juice from plants which are near the flowering period, will be found more palatable.

The thick portion of the leaves near the base, and the roots, when cooked are palatable. The Indians of New Mexico cook these portions and roll them in sheets to be dried for food, they form an important part of the diet of some of the tribes who are called in consequence mescaleros.

Attention is invited to the subjoined letters which have an im-

portant bearing upon the history of the introduction of this plant as an Anti-Scorbutic. Its value may be estimated by reference to the good effects observed in General Godfrey Weitzel's command, while serving in the Western (Rio Grande) District of Texas, after the close of the late war.

G. PERIN,

Assistant Surgeon General, U. S. A.

"ART. III.—*Maguey, or Agave Americana; a Remedy for Scorbustus.*
By GLOVER PERIN, M. D., Assistant Surgeon, U. S. Army.
Communicated by order of THOMAS LAWSON, M. D., Surgeon-General, U. S. Army.

FORT MCINTOSH, Laredo, Texas, May 7, 1851.

SIR: A few days after my communication to the Surgeon General of the 9th ult., finding, as I had anticipated, that the number of cases of scorbustus were still increasing, and that the lime-juice, the only effectual remedy, could be procured in but limited quantity, I was induced to look for relief in some other way; the inquiry presented itself—whether the citizens of the town of Laredo, who are alike destitute of vegetables, had not been affected with this disease? and, if so, what domestic remedies had they used?

I was informed by the Curate of the town, an intelligent Catholic Priest, that a few cases had come to his knowledge, and that he once suffered from an attack of scorbustus in his own person. He gave me an account of his own case, and of the domestic remedies resorted to.

He stated further, that he left his bed on the 9th day from the time he commenced the use of his remedies, and that by the 15th, he was so far recovered as to resume his parochial duties. He did not know to what agent he should attribute his rapid recovery, but expressed his belief in the superior efficacy of warm bathing, which he used daily.

Among the domestic remedies which he used, and the one which appeared at once to my mind as the chief, was the *Maguey, or Agave Americana*. This plant is mentioned among the unofficial articles in the U. S. Dispensatory as the American Aloe, and "is said to be laxative, diuretic and emmenagogue." As officinally described it is the *Agave Americana; Nat. Order Bromeliaceæ; Sex. Syst. Hexandria Monogynia*.

As the Maguey appeared to be the remedial agent in the Curate's case, I determined to make a trial of its effects upon some of the patients suffering from the scurvy in this command. The following cases were selected:

Private Turby, of Company "G," 1st U. S. Infantry, was admitted into hospital March 25th, in the following state: Countenance pale and dejected; gums swollen and bleeding; left leg, from ankle joint to groin, covered with dark purple blotches; leg swollen, painful, and of stony hardness; pulse small, feeble; appetite poor; bowels constipated.

He was placed upon lime juice, diluted and sweetened, so as to

make an agreeable drink, in as large quantities as his stomach would bear; diet generous as could be procured, consisting of fresh meat, milk, eggs, &c.; vegetables could not be procured.

April 11th.—His condition was but slightly improved: he was then placed upon the expressed juice of the Maguey, in doses of two fluid ounces three times daily; same diet continued.

April 17th.—Countenance no longer dejected, but bright and cheerful; purple spots almost entirely disappeared; arose from his bed and walked across the hospital unassisted; medicine continued.

May 4th.—So much improved as to be able to return to his company quarters, where he is accordingly sent; medicine continued.

May 7th.—Almost entirely well; continue medicine.

Private Hood, "G" Company, 1st U. S. Infantry, was admitted into hospital April 10th. His general condition did not differ much from Private Turby's. He had been on the sick report for eight days; had been taking citric acid drinks, but grew gradually worse up to the time of his admission, when he was placed upon lime-juice until the 13th, at which time no perceptible change had taken place. On that date he commenced the use of the expressed juice of the Maguey; same diet as the case above described.

April 21st.—General state so much improved, that he was sent to his company quarters.

May 22d.—Well; returned to duty.

Eleven cases, all milder in form than the two just related, were continued upon the lime-juice; diet the same. On the 21st April they exhibited evidences of improvement, but it was nothing when compared with the cases under the use of the Maguey.

Seven cases were under treatment during the same time, making use of citric acid. On the 21st April, no one had improved, and three were growing worse.

At this time, so convinced was I of the great superiority of the Maguey over either of the other remedies employed, that I determined to place all the patients upon that medicine. The result has proved exceedingly gratifying; every case has improved rapidly from that date. The countenance, so universally dejected and despairing in the patients affected with scurvy, is brightened up by contentment and hope in two days from the time of its introduction; the most marked evidences of improvement were observable at every successive visit.

From observing the effects of the Maguey in the cases which have occurred in this command, I am compelled to place it far above that remedy which, till now, has stood above every other—the lime-juice.

This no doubt will appear strong language, but further experience will verify it.

The juice of the Maguey contains a large amount of vegetable and saccharine matter, and of itself is sufficiently nutritious to sustain a patient for days.

This succulent plant grows indigenous in most parts of the State, and if I am correctly informed, in New Mexico and California. In Mexico it is well known as the plant from which they manufacture their favorite drink, the "Pulque," and grows in great abundance. As it delights in a dry sandy soil, it can be cultivated where nothing but the cactus will grow; for this reason, it will be found invaluable to the army at many of the western posts, where vegetables cannot be procured.

The manner in which it is used is as follows, viz.: The leaves are cut off close to the root, they are placed in hot ashes until thoroughly cooked, when they are removed, and the juice expressed from them. The expressed juice is then strained, and may be used thus, or may be sweetened. It may be given in doses of two to three fluid ounces three times daily.

It is not disagreeable to take, and in every instance it has proved to agree well with the stomach and bowels.

After the leaves have been cooked, the cortical portion near the root may be removed, and the white internal portion may be eaten: it appears to be a wholesome and nutritious food. I have seen mule-teers use it in this way, and they seem to be very fond of it. I have been informed, upon good authority, that several tribes of Indians in New Mexico make use of it in the same manner. The use of the leaf in this way, I believe, will ward off most effectually incipient scorbutus.

The great benefit I feel confident will accrue to the army by the introduction of the Maguey as a remedial agent in the treatment of scorbutus, has induced me to address you at some length upon this subject; its importance, therefore, is my apology for the length of this communication.

I have the honor to remain,

Very respectfully, your obedient servant,

(Signed) G. PERIN, *Ass't Surg., U. S. A.*

BVT. BRIG. GEN. TH. LAWSON,

Surgeon-General U. S. Army, Washington, D. C.'

SURGEON GENERAL'S OFFICE,

July 10, 1851.

SIR:

Your two communications of the 7th May last, one transmitting a duplicate of your semi-annual return for the half year ending March 31st, 1851,—the other being a report relative to the use of the Maguey in Scorbutus, were duly received.

In reply I am instructed to inform you, that this Department considering your report on the use of the Agave Americana, or Maguey, as exceedingly interesting and valuable, especially to that portion of the Army stationed in Texas, New Mexico and California, have caused a synopsis thereof to be published in one of the daily papers in this city, and have forwarded a copy of the report to the Editor of the New York Journal of Medicine for the pages of that Journal.

Very respectfully,

Your obedient servant,

By Order,

RICH'D H. COOLIDGE,

Asst. Surgeon, U. S. Army.

DR. GLOVER PERIN,

Asst. Surg., U. S. A.,

Fort McIntosh, Laredo, Texas.

“ANTI-SCORBUTICS,”

UNITED STATES ENGINEER'S OFFICE,

Detroit, Mich., October 10th, 1874.

*General W. T. Sherman, Commanding U. S. Army,
Washington, D. C.*

GENERAL:

I have been travelling so much during the whole summer, on duty connected with the works under my charge, that I have not read the last chapter on Army Organization from you, which I am told was published about two weeks ago. This morning in conversation with First Lieutenant Platte M. Thorne, Quartermaster of the Twenty-second Infantry, I learnt from him that in your discussion on Anti-Scorbutics you omitted the juice of the Agave Americana.

The manner in which I became acquainted with the virtues of the juice of this plant as an anti scorbatic was as follows, viz.: You are undoubtedly aware that shortly after the surrender of General Joe Johnson to you I was ordered with my corps to the line of the Rio Grande.

After the late General Fred Steele was assigned to the command of the Department of the Columbia, I was left in command of the Western Rio Grande District of Texas. In the absence of vegetables scurvy soon made horrible inroads into my command. At one time nearly eleven thousand men were more or less affected by it. Lieutenant General Sheridan, who was in command of the military division, with headquarters at New Orleans, made every effort to supply us with vegetables, but only with small success, on account of their rapid decay in the passage across the Gulf.

In the midst of our troubles General Sheridan came over on a tour of inspection, and then told me of his experience on the Staked Plains, while in command of troops before the War. He informed me that his command was suffering terribly from the scurvy, as no vegetables were to be had. It was then suggested to him by the doctor of his command (whose name I have unfortunately forgotten) to try the juice of the plant above mentioned, which grows so profusely in Western Texas. Acting upon his advice I sent out scouting parties to find groves of it, and fortunately found one about one hundred miles to the eastward of Brownsville. We improvised two old fashioned cider presses, and established regular wagon trains to carry the juice to my men.

The men were compelled to hold their noses while drinking it, but it had the happiest results. The scurvy gradually, and when cool weather came and vegetables were brought to us, entirely disappeared.

I would have sent this letter to you through Lieutenant General Sheridan, but I passed through Chicago yesterday and learned from him that he proposed to start this morning for Fort Sill and the Wichita Mountains.

As I understand that you propose to publish your articles in a book form, I thought it important to inform you of this, so that you might incorporate it, and my experience might be of benefit to the troops whose fortune brings them in that miserable part of our country.

I am, General, very respectfully,

Your obedient servant,

G. WEITZEL,
Major of Engineers.

HEADQUARTERS ARMY OF THE U. S.,

St. Louis, Mo., October 17th, 1874.

*General G. Weitzel, Major of Engineers,
Detroit, Mich.*

MY DEAR GENERAL:

I was very glad to receive your valuable communication of October 10th, and with your consent I will send it to the Army and Navy Journal for publication.

I have no intention of publishing in pamphlet form the article to which you refer, but have placed it before our military readers to suggest thought and the study of things which are not to be found in the text books. It will be news and most valuable news to many of our troops along the Mexican border, that the "Agave Americana" is found a good cure or preventative of that horrible disease, the scurvy. Now, by the "Am. Agave," I suppose you mean the Spanish Bayonet so common in Florida and Texas.

I also believe that similar virtues will be found in the fruit of the common Prickly Pear, and in the succulent leaves of some of the varieties of the Cactus that abounds on the deserts of Texas, New Mexico and Arizona.

A discussion of these things will do great good, because such knowledge may enable one officer to maintain his command in health, when another would halt or retreat for help.

I thank you for your communication, and will be pleased to have all officers contribute their share to this important branch of military knowledge, when after some time, anyone may compile a volume of great use to the young officers who have a right to our experiences without the labor and trouble of discovering it by themselves.

With great respect,

Your obedient servant,

W. T. SHERMAN,

General.

DETROIT, MICHIGAN, December 15th, 1874.

General W. T. Sherman,

Headquarters Army of the United States,

St. Louis, Mo.

GENERAL:

Since writing you the letter of October 10th, relating to the virtue of the Agave Americana as an Anti-Scorbutic, I have learned that DR. GLOVER PERIN, U. S. Army, was the Doctor who first called attention to it.

I have the honor to enclose a copy of his report, dated Fort McIntosh, Texas, May 7, 1851, to General Lawson. I think it only right, in justice to DR. PERIN, that this should receive, through the columns of the Army and Navy Journal, the same publicity which my letter of October 10th received, for his discovery saved many lives in my command.

Very respectfully, etc.,

G. WEITZEL,

Major of Engineers, U. S. A.

